2008 SARC Membership Dues Are DUE!

THE AIRWAVES

January 2008

SIERRA AMATEUR RADIO CLUB

An ARRL Special Service Club

RACES ARES

P O Box 1442 Ridgecrest California 93556-1442

BOARD	President	Greg Roush	WA7IRW	446-4383
	First VP	John Andrus	KC6UWM	371-2190
OF	Second VP	Fred Moses	KG6STR	371-4034
	Secretary	Paula Herr	N6VGW	375-5324
OFFICERS	Treasurer	Pam Evans	KC6UUS	375-4240

SARC OWNED AND MAINTAINED REPEATERS

Randsburg	WA6YBN 145.34 MHz (-), PL 100.0 Hz, Wide Area, Emergency Power, linked to 147.00
Ridgecrest	WA6YBN 146.64 MHz (-), Translator, No Squelch Tail, Emergency Power
Ridgecrest	WA6YBN 147.00 MHz (+), PL 107.2 Hz, Autopatch, linked to 145.34
Ridgecrest	YBNBBS:WA6YBN, 145.050 MHz, Bulletin Board, 1200 Baud
Ridgecrest	#YBNSW:WA6YBN-4, 223.580 MHz, Node, 1200 Baud
Ridgecrest	#YBNSW:WA6YBN-4, 439.025 MHz, Node, 9600 Baud

SARC Committees

Technical Assistance: Greg, WA7IRW 446-4383
Program: Fred, KG6STR 371-4034
RF Interference: Bill, WA6QYR 375-8566
Public Relations: John, KC6UWM 371-2190
Airwaves Editor: Mike, WA6ARA 375-5324
Emergency and Public Service: Mike, W6PA 793-0541

THE AIRWAVES CALENDAR

Every **ARRL Audio News**
1910 (7:10 p.m.) on 146.64 MHz

IWV Emergency Net
Visitors Welcomed!
Monday 1930 hrs (7:30pm)
WA6YBN Translator 146.64 MHz (-)

East Kern County Emergency Net
Night **Visitors Welcomed!**
Rand repeater 145.340, pl 100
2000 hrs (8pm)

Jan 9 SARC Installation Dinner
630 pm – Casey's Steak and BBQ
See article inside

Jan 26 Fire Mountain 50 Horse Ride
Contact Bill WA6QYR 375-8566 to volunteer.

AMATEUR RADIO LICENSE EXAMS

Every Even Month, Second Saturday

Feb 09 Volunteer License Exam Session
Location: Guns 4 Us, basement classroom
417 East Ridgecrest Blvd, Ridgecrest CA
No handicapped access Pre-reg by 4 Feb Limited to 8 applicant All must register at 9 AM
Contact Elvy Hopkins NØLV 760-384-3589
E-mail <lvrh7589@iwvisp.com>

2008 SARC Dues Are DUE!

Yes, it's that time of the year once again. Your 2008 SARC dues are due. Your dues support numerous repeaters, some possible repeater expansion, insurance, meeting site, upcoming technician class, this newsletter and host of other items. Please use the application at the end of this newsletter and rejoin, better, bring it to the January Installation Dinner. Also, please consider using the email option for the newsletter.

SARC Installation Dinner

The annual SARC Installation Dinner will be held on Wednesday, 09 January, 630pm at Casey's BBQ, 1400 N. Norma. There will be good times, good food and lots of prizes and a whole lot more.
Your new SARC 2008 Officers are:

President	Greg Roush, WA7IRW
First VP	John Andrus, KC6UWM
Second VP	Fred Moses, KG6STR
Secretary	Paula Herr, N6VGW
Treasurer	Pam Evans, KC6UUS

Door Prizes include:

- MFJ 249 SWR Analyzer
- VX3R Handheld
- 2008 ARRL Handbook
- ARRL Digital Handbook
- MFJ G5RV Antenna
- LED Flashlights
- ...and more!

From the (outgoing) President's Shack

Another year has come and gone. Hope everyone had a very Merry Christmas. As you read this, I am still in the backwoods of Arkansas visiting relatives and no, it's not Bill Clinton. He's a second cousin three times removed on my mother's side ... NOT :)

Seems like yesterday the club was holding officer elections for 2007 when I was elected President. As they say "time really flies when you're having fun" so we must have had a ball this last year. I know I did. Although I enjoyed being the SARC president this year, I have chosen not to run for President again this year due to personal schedule issues.

The club had a busy year too. The membership participated in many worthwhile functions for several organizations. The Monday night emergency net continued to provide a forum for learning and information exchange for those interested in Emergency Comms. Throughout the year, the monthly programs at the SARC meetings were educational as well as entertaining. Field Day was unique this year as it was the first time we (SARC) joined forces with the Lake Isabella club (SARG) in a cooperative venture. We also had several club members upgrade their licenses. Congratulations to all that passed the examinations. To those that weren't so lucky the first time round, study up and try again. I'm sure you'll do it next time. Speaking of upgrading and exams, the club is planning a Technician License class after the first of the year (date tentative around end of Feb). Planning is in progress and details will be announced when completed. So tell your friends who may be interested in becoming a member of the amateur radio community.

The full slate of officers for 2008 has been elected. The new SARC President is Greg Roush WA7IRW. Please join me in welcoming Greg to the 'hot seat' and let's all pitch in to make 2008 the best year for SARC. My challenge to all SARC members is to work to bring at least one new person to the SARC membership and help them get a Tech License. Also if you have never presented at a club meeting, please consider it. It doesn't have to be a highly technical topic. Any topic of interest to club members is great. We'd love to hear what your into. Remember, SARC is YOUR club and it's here for YOU. Did you know you can renew your ARRL membership through the club and the club benefits too?

As a final note, the 2008 SARC Officers Installation Dinner is in place of the January meeting. It will be at Casey's BBQ 1400 N. Norma St. on Jan 9, 2008 at 6:30pm. There will food, friends and nice prizes. Please make plans to be there.

See you at the meeting,
Gene KI6LO

December Meeting Minutes

After all the snacks from Pam, KC6UUS and the hot apple cider by Paula, N6OQQ, President Gene, KI6LO lead the search for a new president. After all the phone calling by Bill, WA6QYR no one had volunteered for the job. Greg, WA7IRW finally consented to be on the ballot for President along with Paula N6VGW for Secretary and were voted into office for the 2008-year. So the new officers are President Greg, WA7IRW; 1st VP John, KC6UWM; 2nd VP Fred, KG6STR; Secretary Paula, N6VGW; and Treasurer Pam, KC6UUS

Greg, WA7IRW held forth on a Jackite telescoping fiberglass mast of which he had two examples. One 31 ft for about $60 and a 20 footer for $30. long Jackite mast. Phone number is 757-426-5359 or www.jackite.com. Greg also talked about his Spectrum Lab software he used in the ARRL frequency-measuring test last month. It was noted that steel pushup telescoping mast could be ordered from Inyokern ACE hardware.

Mike, WA6ARA talked about his Ramsey FM-6 kit that he used a hypodermic needle with soldering paste and solder to mount the surface mount parts and then just heated them on the board with an embrossing tool.

Mike. WA6ARA reported on the license class committee progress. The plan is to use the ARRL no code Technician class materials for a 6-week class starting in late February and will end just a day before the next VE session. The committee will be meeting on January 10 for the next planning session.
Fred, KG6STR talked about TiniCAT N5ZTW level converter kit and sound card software for Yaesu radios.

The web site is www.N5ZTW.com. Fred also had built a 45-foot mast from materials gathered at Home Depot. 1 5/8 inch chain link fence top rail with a tilt over section made from square tubing stock. It has two sets of guys and looked neat. He has a disc cone antenna on top and a MFJ G5RV antenna for HF.

The installation dinner is at Casey's BBQ on 9 Jan

Mike, WA6ARA won the 50-50 drawing with $13.00.

Submitted by Bill, WA6QYR

TREASURER'S REPORT

Treasurer's Report as of 01 January, 2008:

Draft Account	$ 268.17
Share Account	$ 4,629.97
BALANCE:	**$4,898.14**

submitted by Pam Evans, KC6UUS

DX'ing from the IWV

By KI6LO

Welcome back DX'ers. Hopefully that special Santa delivered the 'goods' this year and you have a new DX machine in the shack. To continue helping you get the most from your DX experience, this month we're covering points on the proper settings for transmit levels to avoid over-modulation, splatter and causing QRM (or man made noise or interference), a topic that not only DX'ers, but all amateur radio operators in general, should know.

"Why do I need to (or even want to) do this" you may ask?
First, as amateur radio operators we are responsible for the quality of all signals emanating from our station's transmitter(s) (FCC rules, you do remember those?). To achieve this, you need to understand the basics of transmitter signal generation and causes of poor signals. Secondly, to lessen QRM and prevent poor operating habits, thereby increasing the enjoyment of the art of DX'ing for all.

Since I am limited in space for this column, I will refer you to a reading list (again) for the basic understanding of how the basic transmitter works and how various modes of modulation are achieved properly. I would recommend that you read sections of the ARRL Operating Manual, ARRL Handbook or any of the other myriad of fine technical books and articles from ARRL/QST, CQ Magazine and others that cover transmitter basics, theory and ideas. Here I will also be assuming that many of the users of this column are recent upgrades to HF from Technician Class license and hence may be more familiar (or comfortable) with voice modes. If you are a CW op, that is great but for now we will mainly focus on voice modes. To do this, let's take a look at one of the most common problem areas, namely improper ALC level.

Automatic Linearity Control (ALC)
Besides using SPLIT mode incorrectly, one of the main problem areas for new HF ops is improperly driving or overdriving your transmitted signal. Doing so will endear you to many in the ranks of DX'ing as a 'LID' with a poor quality signal. Follow along as we take a look at how and why to adjust the radio for proper ALC indication for a standard SSB voice mode. Other modes using voice input (i.e. via the microphone jack) are similar but may have slight differences which you will need to learn for those modes. Many signals heard on the airwaves these days indicate a lack of understanding in proper modulation adjustments by the operator so we'll try and see why this is a problem.

To start, you should refer to your user's manual for your transceiver (or transmitter if you have a 'classic') and locate the following; MIC GAIN control, TRANSMIT SIGNAL meter display (showing ALC, POWER OUT, etc) and any special procedures for tuning the final amplifier (usually in the case of a 'classic' tube type unit). At this point, I will assume that your transceiver/transmitter is either 1) solid state and requires no tuning for full output power or 2) has the final amplifier tuned correctly for the band you want to use.

Before we start adjusting anything for the ALC, let's take a look at the TRANSMIT SIGNAL display / meter. This usually is the same meter / display group used for receive signal strength indications ('S-Meter'). One scale on the meter will show the ALC level for your transmitted signal. It may require a change of a switch setting to measure ALC instead of something else, perhaps 'Power Out'. This ALC indication, although not an exacting value, is used as a reference to properly adjust the peak levels of audio (microphone input signal) used to drive the transmitter in voice SSB and non-voice SSB modes like RTTY or SSTV. Proper adjustment of the ALC maximum level will help prevent an over-modulated transmitted signal. The basic intent is to keep the ALC maximum deflection during transmission below that level at which the RF envelope peaks are clipped (where the transmitted signal is flattened on top) and the RF envelope valleys are flattened. Your readings on transmitter theory should have touched on this phenomenon. If either condition were to happen, this could cause the generation of harmonic signals (i.e. splattering) and lead to a poor quality transmitted signal.

To properly set the ALC level to the desired amount, the 'MICROPHONE GAIN' (or MIC GAIN) will be adjusted while observing the ALC meter indication, which should be peaking just below the maximum allowable indication (usually 0 dB or the 'redline' mark), while speaking into the microphone in a 'clear, normal volume speaking' voice at a constant (and comfortable) distance from the microphone to your mouth. Any further increase in the MIC GAIN control would cause overdriving the input and possibly causing a poor signal. Any deviation from the conditions that were used to adjust the MIC GAIN may cause changes in the ALC level indication, either over driving (e.g. speaking louder) or under driving (e.g. farther from microphone) your modulation signal.

Once the MIC GAIN has been properly set for your voice levels (ALC at or below 0dB or just below the RED area), there are many things may affect the input levels from the microphone during normal operations. One of the most common is the rise in voice levels during the excitement of calling a rare new DX station. By remaining calm and talking in the same clear, normal speaking voice as the MIC GAIN is adjusted for, your chances should be much better since your signal will be more intelligible. Screaming in the microphone isn't going to help at all, possibly creating a poor quality signal and making your chances worse. Repositioning the microphone to cause the distance from microphone to operator's mouth to change can also change the ALC level. By monitoring the ALC levels during normal operations, the MIC GAIN can be 'tweaked' as needed to keep the ALC level at the proper indication.

What about non-voice modes that use the microphone input such as Radio-Teletype (RTTY), PSK31, Slow Scan TV (SSTV), etc? Each mode has its specified maximum level of ALC. Since these modes use the same input circuitry as a SSB voice signal, the ALC adjustments are very similar, identical in some cases. Some are like the SSB ALC level described above while others require a much lower level. For example, PSK31's transmitted signal ALC level is properly adjusted when the drive is reduced to a point where ALC level is just below any movement at all on the ALC meter. If the ALC is deflecting upscale any at all, you need to reduce either the MIC GAIN or soundcard output level to keep the ALC level at the level required. Your power output will also reduce, which is normal. Most PSK31 signals are below 50W, usually around 35-40W on most 100W class transceivers when properly adjusted. Never run full power output (ALC at 0dB) on PSK31. Your signal will be extremely too wide and you'll not make too many friends there.

For RTTY, the required ALC level is usually that of normal SSB or slightly less. I find that running my RTTY ALC level at about 2/3 of the SSB maximum of 0dB gives a nice clean signal with proper envelope and accurate decoding on the receive end of the link, without driving the transceiver and amplifier at full output. Most RTTY stations run 100 watts or more, up to full legal limit. SSTV is setup similar to SSB and RTTY. The main thing to ensure with RTTY, SSTV and other high duty cycle modes is the ability of the equipment to transmit at long durations at the full specified output of the equipment. Most, but not all, require a reduced output level to run high duty cycle modes and this is achieved by reducing the drive and indicated by a reduced ALC indication.

Monitoring Your Transmitted Signal

There are various methods to monitor your output transmitted signal. You could listen to the signal on another receiver but this method isn't that accurate, requires a separate receiver and can interfere with your operation of the current main receiver during your DX'ing. You could periodically have a local ham listen to your signal and check for problems. This isn't the best method either because the interpretation of the quality of your transmitted signal is subjective at best unless the received signal is analyzed on sophisticated equipment, which most hams do not own. So how is the amateur radio operator supposed to ensure that he/she is propagating their best signal?

The most accurate method of ensuring the most clean well adjusted signal you can generate is to monitor the output your transmitted signal directly on a local 'Station Monitor Scope' and adjust the input levels and MIC GAIN for a proper display indication on the scope. Granted this is an additional expense to the shack's budget but it is a highly recommended one, especially if you are planning to work many different modes and need to ensure correct adjustments every time. Inexpensive scopes from classic stations are on eBAY, QRZ.COM, EHAM.NET and other places on the internet everyday for decent prices. It is highly recommended that every shack have a quality monitor scope (or oscilloscope) to allow visual monitoring of any transmitted signal quality.

For PSK31, there is the PSKMeter (http://www.ssiserver.com/info/pskmeter/) which automatically monitors your PSK31 signal and decodes / processes the sample to continuously set the drive levels (via the host PC serial port) to ensure the most accurate PSK signal all the time. I do not personally endorse this product as I have never used it, but it appears to be well received by the amateur radio community. It is available as an inexpensive kit and if you're serious about PSK31, then this device should be investigated closely.

Summary

Although we've briefly touched on the topic of ensuring that the signal we transmit is of good quality and meets the standards for a proper amateur SSB signal by the FCC, this information is not exhaustive. There are many other aspects of ensuring your signal is properly formed, such as bandwidth, no RFI feedback, etc. The main intent here is to ensure our signals are not overdriven, which is a commonly seen problem with many signals on the bands today. By doing your readings and following the processes described here, you should be able to adjust your MIC GAIN to achieve a proper ALC indication, thereby helping ensure you're meeting the legal definition for signal purity as well as promoting the transmission of a quality signal and helping to prevent QRM.

Well until next time, good DX'ing and remember to be courteous to your fellow DX'er.

Gene - KI6LO ki6lo@radioroom.org

FOR SALE

Johnson Valiant transmitter, antique boat anchor. For Sale, for a tank of gasoline!! Jim WA6TFZ 760-377-3474

Check out the SARC Web Page www.qsl.net/wa6ybn/

MEMBERSHIP APPLICATION

SIERRA AMATEUR RADIO CLUB of the HIGH MOJAVE

Please fill out this form. It is used to make the club roster and newsletter mailing list. This form must accompany all membership and badge payments. All renewals are due 31 March. Please mail this application and your payment to SARC, POB 1442, Ridgecrest, CA 93556-1442 or give them to the Secretary at a meeting.

Membership – Please circle one

Individual via Mail - $20.00	Individual via Email - $17.00
Family via Mail - $30.00	Family via Email - $27.00
Full time student via Mail - $10.00	Full time student via Email - $8.50
Active Duty Military via Mail - $10.00	Active Duty Military via Email - $8.50

Individual or First Family Member Date _____

Name: Last_____ First_____ Call Sign_____

Novice___ Tech___ Gen___ Adv___ Ex___ ARRL Member : Yes _____ No _____

Newsletter Format Printed via mail ____ Email (PDF only) ____

E-Mail Address_____ (Note: Email address is not shared, for newsletter only)

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State_____ Zip_____

Phone: _____

Second Family Member (For more family members please duplicate)

Name: Last_____ First_____ Call Sign_____

Novice___ Tech___ Gen___ Adv___ Ex___ ARRL Member : Yes _____ No _____

DO NOT DETACH **BADGE ORDER** *DO NOT DETACH*

The club badge shows your Amateur Call, your Name and Sierra Amateur Radio Club. It will identify you at club meetings and public service events. To order a badge, provide the information below and, include $11.00, for *each* badge in Membership Application total above or with this form and mail to SARC, POB 1442, Ridgecrest, CA 93556-1442 or give it to the Treasurer at a meeting.

Name to put on my badge is_____ (What you like to be called)

Amateur call for my badge is_____

THE AIRWAVES NEWSLETTER
January 2008

RACES, ARES and INDIAN WELLS VALLEY EMERGENCY NET MEMBERS

In case of impending or current emergency, monitor the SARC translator on 146.64/04 MHz or the backup simplex frequency of 146.52 MHz. W6PM, Mike or AI6A, John, the local RACES ECs, will coordinate mobilization. An Emergency Net Control Station will direct radio communications. Check in. State your capabilities. Be prepared to go outside the IWV for at least three days. An E-Pac should contain: your RACES card, radios and accessories, batteries, charger, paper, pen, clipboard, flashlight with spare batteries, timepiece, headgear, sunglasses, spare glasses, your medications, your medical history, first aid kit, severe weather clothing, non-perishable food, 3 gal. water, sleeping bag.

SIERRA AMATEUR RADIO CLUB
POST OFFICE BOX 1442
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